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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,505	06/05/2006	Mei Wang	1328-28	2905

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EXAMINER	
GITOMER, RALPH J	
ART UNIT	PAPER NUMBER
1657	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/570,505	WANG ET AL.	
	Examiner	Art Unit	
	Ralph Gitomer	1657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *21-24 and 26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The amendment received 7/8/10 has been entered and claims 1-20, 25 are considered here. Claim 20 previously withdrawn is now considered due to its being newly amended to depend from claim 1. The amended title and abstract are acceptable.

The elected specie is biomarkers. Please inform the examiner of all related applications, pending, allowed or abandoned, and their status.

The point of novelty considered here is employing multivariate analysis which is interpreted to mean analyzing data from more than one variable or in this case measurement.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-20, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Huyn, Borisy, Afeyan, Khwaja, Pugh.

Huyn (2002/0095260) entitled “Methods for Efficiently Mining Broad Data Sets for Biological Markers” teaches in the abstract, determining measurements from blood samples of biomarkers for assessing response to a drug. In column 1 first paragraph, various statistical methods of interpreting data is discussed.

Borisy (2003/0096309) entitled “Screening System for Identifying Drug-Drug Interactions and Methods of Use Thereof” teaches in paragraph 20 providing a drug library , determining the results of administration, and identifying drug combinations that provide the desired result. In paragraph 48 a number of drugs may be tested in different combinations. In paragraph 52 profiling the combinations is discussed.

Afeyan (2005/0283320) entitled "Method and System for Profiling Biological Systems” teaches in paragraph 8 profiling a biological system for pharmacological agent response. In paragraph 11 multivariate analysis on a plurality of data sets is shown.

Khwaja (6,379,714) entitled “Pharmaceutical Grade Botanical Drugs” teaches in column 3 last paragraph, a plant extract may contain a plurality of active ingredients which exhibit a given biological activity. An aliquot is removed, separate the aliquot into a plurality of marker fractions each of which include an ingredient and the degree of biological activity for each of the marker fractions is determined. In column 4 first paragraph the invention is useful for determining if a particular botanical material meets

levels of pharmacological activity. In column 7 last paragraph, biological assay include cell proliferation assays.

Pugh (J Agricultural Food Chem) entitled "Characterization of Aloeride, A New High MW Polysaccharide from Aloe vera With Potent Immunostimulatory Activity" teaches on page 1031 isolated fractions of aloe were tested in a macrophage assay. On page 1033 Fig. 3 shows a dose response for a fraction.

The claims may differ from the above references in that they specify multivariate analysis specifically and various to separate the components of the product and various types of biological profiles.

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ multivariate analysis in the methods of analysis shown by each of the above references because each reference teaches analyzing data from more than one measurement. Employing known methods to separate chemical mixtures with the expected results would have been obvious. And the claimed biological profiles are conventional in this art. The nature of pharmacognosy is such that most all drugs originated in natural products which are mostly a mixture of compounds and the desired activity was found in some fashion to be associated with a specific and single chemical which was then isolated or synthesized. In other cases, such as in the references above, synergy between components was investigated. The present claims read on this old method. And to vary the concentrations of components does not lend patentability, dose response curves to LD50 are conventional tools of investigation in this art.

Applicant's arguments filed 7/8/10 have been fully considered but they are not persuasive.

Applicants response argues that standard drug screening is directed to a single compound at a time is tested whereas the present invention employs multiple components seeking synergistic effects and provides measurements at a systems level which is important for multifactorial disease, not at a molecular or cellular level.

Huyn does not measure the effect of a complex mixture on a complex disease pattern or identify its bioactive profile but merely seeks relevant biomarkers. Borisy employs synthesized or purified components to identify combinations of known drugs. Borisy does not obtain information regarding feedback signaling. Afeyan does not teach varying the concentrations of one or more components to determine the respective concentrations required for the desired effect on a disease. Khwaja focuses on isolating compounds which will not find synergism. Pugh isolates compounds and does not seek synergism. Traditional pharmacognosy isolates compounds to find an active compound whereas the present invention finds bioactive compound profiles that work in synergy using a disease pattern.

It is the examiner's position that the invention as described in the arguments is not found in the claims. No synergy is seen in the specification or claims. Huyn measures biomarkers to assess drug response using statistical methods. Varying the dose of the drug would affect the response. The claims are directed to a natural product mixture which would include synthesized or purified components. No feedback signaling is claimed. Afeyan profiles biological systems where the dose of a drug tested

would affect its response. Regarding Khwaja and Pugh, the claims are not directed to synergism. Neither the method claimed nor any teachings found in the specification as originally filed teach one of skill in this art how to determine which components of a complex mixture of components provide synergy with other components.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20, 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

A reading of the specification reveals the point of novelty may reside in employing multivariate analysis in an interactive fashion to improve a natural product mixture by examining a biomarker. The specification reveals no natural products, no improvements and no multivariate analysis. And what biomarker may be intended is unclear.

Applicant's arguments filed 7/8/10 have been fully considered but they are not persuasive.

Applicants response argues that the specification describes the claimed method steps.

It is the examiner's position that the specification does not teach the claimed invention in such a fashion that one of skill in this art could practice the invention. Referring to the single prophetic example in the specification, batches of herbal mixtures are administered to an animal model or a human trial, a control is mentioned. Endpoints are measured. But this is entirely hypothetical and no subject, disease, biomarker or multivariate analysis is shown. What are the biomarkers for which diseases? What analysis is performed? What improved natural product is shown?

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17, 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each of the following applies in all occurrences.

In claim 17 line 3 the parentheses are confusing as to what may be intended. In claim 19 what the samples may be is not understood regarding the range and the claim lacks a period.

This application contains claims 21-24, 26 drawn to an invention nonelected with traverse in the reply filed on 12/29/09. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ralph Gitomer whose telephone number is (571) 272-0916. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ralph Gitomer/
Primary Examiner, Art Unit 1657

Ralph Gitomer
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